Advance Reservation & Co-Scheduling Workshop

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Welcome

- Thank you!
- Logistics

- Goals of the Workshop
- Brief Introduction
- Agenda...

Goals

- ## Define terms
  - e.g., "Advance Reservation"
- ## User & site requirements/constraints
- ## Desired/required capabilities
- ## Develop an architecture
- ## Begin the process of creating a standard for advance reservations in grids

"This" Workshop

- Agree on most basic capabilities and semantics that schedulers should support
  - attract applications users

- Define site policy config. requirements
  - satisfy stakeholders

- Plan implementation for prototype

- Focus on the near-term -- if time permits, map out longer term objectives

Focus: Advance Reservations & Co-Scheduling

NOT:

- accounting, allocations, logging
- security, authentication, authorization,
- information base, staging, error handling,
- scheduling disk, network, tape, etc.

All of these are important too, but time is limited…

What is an "Advance Reservation"?

- **"I want R resources for time period T (with guarantee G)."**
- R
  - one system, many systems, computers + net, ...
- T
  - start & duration: "2 hrs starting 2p Tue"
  - start/end & duration: "2 hrs between 6p - 6a"
  - ...
- G- traditionally implicit!

Steps

- Identify desired reservation (R+T+G)
- Request reservation
- Get reservation ticket (soft/hard)
- (Renew soft reservation)
- (Cancel/revoke reservation)
- Delegate reservation
- Use reservation / allocate resources

Airline Analogy

- Discover resources (travel "agent")
- Courtesy reservation (good for 24 hrs)
- Purchase ticket - commit $
- Cancellation (may forfeit $)
- Flight might be canceled --> callback
- Claim or forfeit -- 10 minutes prior…
- Guarantee is not absolute -- weather, …

Architecture (Parts)

- Describe resources requested/available
- Describe time (requested/available)
- Describe guarantee/policy
- Cost Model
- Match above
- Resource "agents"
- Database of reservations

Agenda

- Brief (~ 5 min) presentations
- General overview of issues & straw man
- Discussion and refinement
  - Capabilities required to interest users and satisfy site policy needs
- Schedule for prototype demonstration

- Long-term directions, and next steps...